15/08/2012

MATRIX Series 5

Service Manual

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1. General

This document contains an overview of the MATRIX Cabinet's major hardware parts and provides a step by step installation guide as well as useful troubleshooting and service instructions.

The MATRIX Cabinet Series 5 is available in several configurations which vary in height, width, number of drawers, bins configuration and size, color etc.
In this document we describe the configuration of the MATRIX MAXI & MINI cabinets, both the TOUCH and POD form of each.

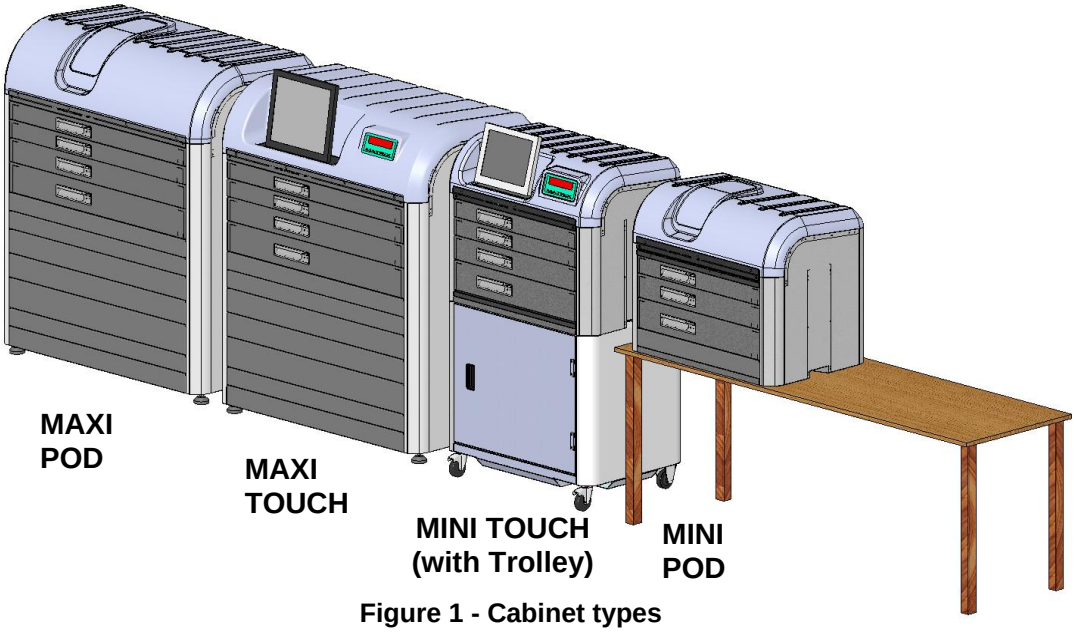


Figure 1 - Cabinet types

1.1. Cabinet types:

	MAXI	MINI
Width	115.1cm / 45.3"	83.9cm / 33"
Height	145cm / 57.1"	74.0cm / 29.1"
Depth	70cm / 27.6"	65.5cm / 25.8"
No. of Drawers	up to 12 or up to 9 with Auto Lock.	up to 5 or 4 with Auto Lock
Cabinet Weight (without drawers)	100 kg (220 lb)	40kg (88 lb)
Drawer weight	28 kg (61 lb) to 31 kg (68 lb) [depending on drawer type]	17kg (38 lb) to 22kg (48 lb) [depending on drawer type]
Auto Lock weight	10 kg (22 lb)	4.5kg (10 lb)
Recommended load weight per drawer	50 kg (110 lb)	20 kg (44 lb)

- **Cabinet form** (available for both MAXI & MINI) –
  - TOUCH – includes touch screen, pc, UPS & bar code reader
  - POD – is supplied without the above accessories. It can be connected to a TOUCH cabinet or directly to the LAN network.
  - Any networked pc can control either the TOUCH or POD form of MATRIX cabinet

  (To learn more about POD form of cabinet, go to chapter 4.1.2)

2. Cabinet Hardware Overview

In this section you will find an overview of the MATRIX Cabinet's major hardware parts.

2.1. Description of Main Parts – Cabinet Front

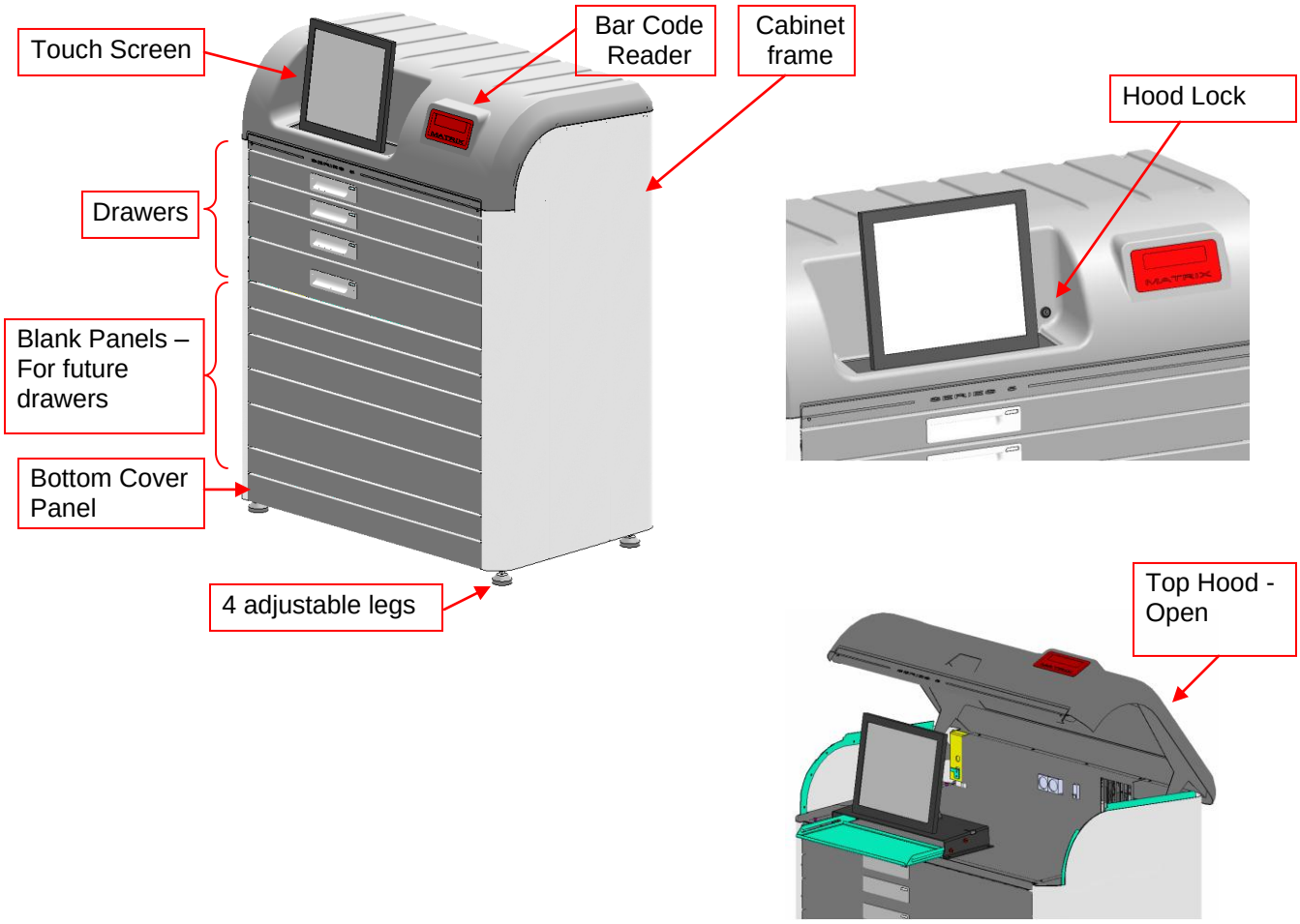


Figure 2 - Cabinet outer view - Front

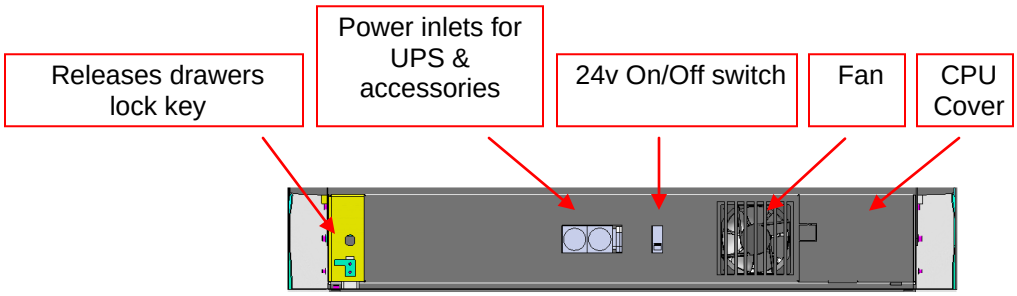


Figure 3 – Electric board view - under the hood

On the front of the MATRIX cabinet (as displayed in Figure 2) you can see the following components:

- **MATRIX cabinet external frame** – comprises chassis, right and left panel, back panel and pc shelf.
- **Hood** – The top hood of the cabinet stays closed during normal use. When needed, turn the Main key*, located on the right side of the screen, and lift the hood to access equipment in the pc shelf.
- **Computer** – The computer* is installed under the hood together with the touch screen and keyboard. The keyboard is stored under the screen and slides out for easy use.
- **Bar Code reader** – The Bar-Code reader installed under the hood and reads via the window in the hood.
- **UPS unit** – Stored under the hood along with the computer, for surge protection and automatic shutdown and restart after long power stoppages.
- **Storage Drawers** (Up to 12 Drawers per MAXI / 5 per MINI or up to 9 Drawers per MAXI / 4 per MINI if Auto Lock is installed on all drawers [subject to drawer height]). Each drawer has a front handle and light.
- **Blank Panels** – Cover the blank space when a drawer is not installed. Number of drawers can vary according to need.
- **Bottom Cover panel** – The bottom panel covers the fork lift access at the bottom of the cabinet. During cabinet installation this panel is removed to allow easy access for the fork lift / carry cart. After the cabinet is placed and leveled, the bottom panel is returned into place.
- **4 adjustable legs**.

* **TOUCH form cabinet only**

Front electric board components:

- **CPU card (covered)** – The main command card, used to control the opening of drawers and bins.
- **Fan** – Cooling fan.
- **'Release lock' key** – A key releases all drawer locks to allow manual opening of drawers during power failure or other reason. When the lock is released, the operator can open any drawer manually by simply pulling out the drawer.
- **24v On/Off switch** – Turn on / off the 24v unit.
- **Power inlets** – Connect UPS and other accessories to power supply.

2.2. Description of Main Parts – Cabinet Back

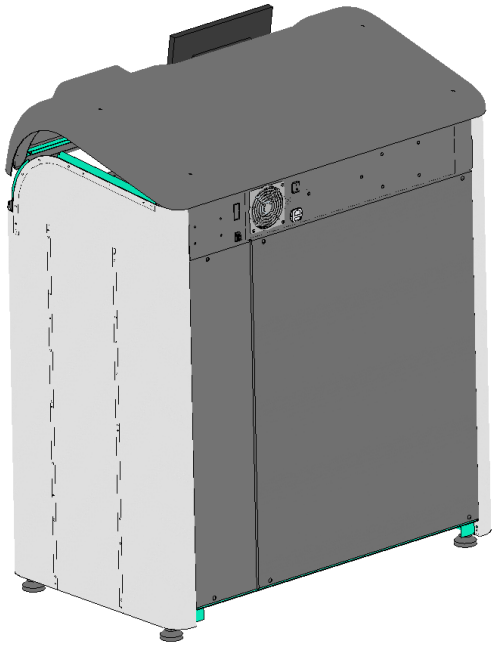


Figure 5 - Cabinet back view

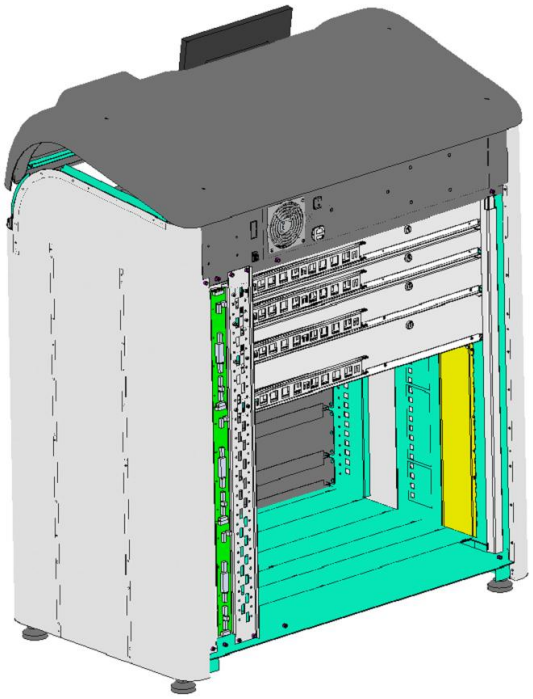


Figure 4- Cabinet Back view - Back Panels Removed

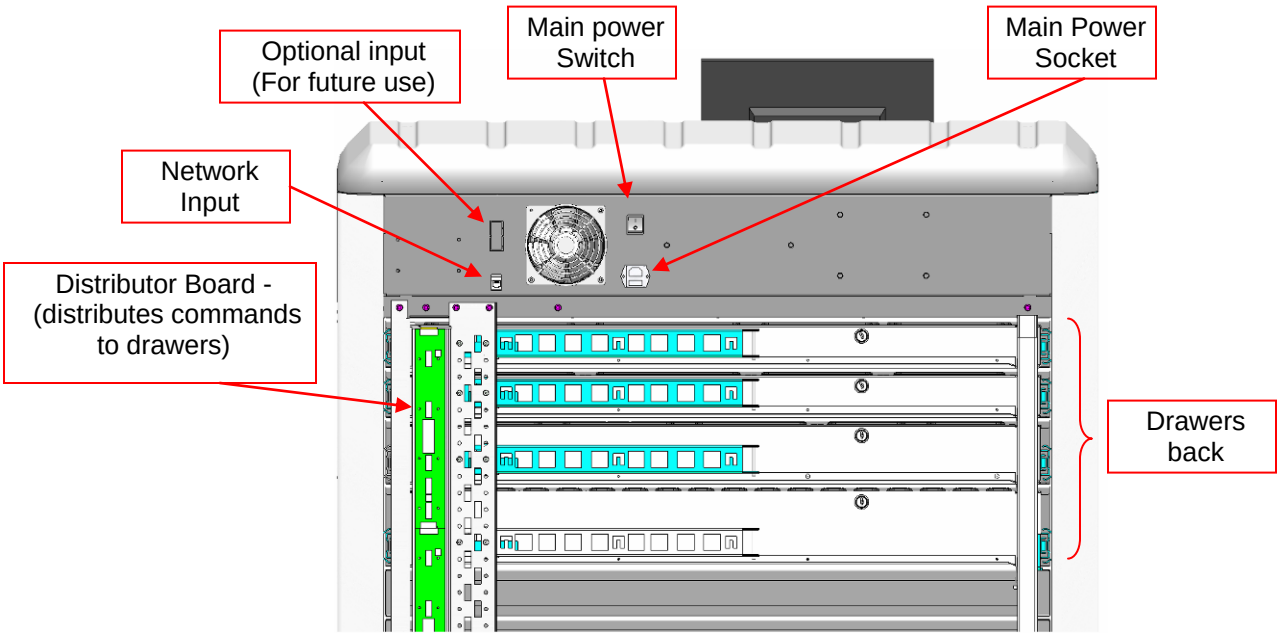


Figure 6 - Back view of components

On the back of the MATRIX cabinet (as displayed in Figure 6) you can see the following components:

- **Main Power Socket** – Connects cabinet to main power (220v / 110v as defined).
- **Main Power Switch** – Main Power On / Off switch.
- **Network Input** – Input for network communication cable or from a Pod cabinet installed nearby. (To learn more on Pod cabinet, see chapter 4.1.2).
- **Distributor Board** – A long vertical electronic board to which all the Drawers Boards are connected by way of flat cable. It distributes the commands from the cabinet's CPU to the drawers.

2.3. Description of Drawer Parts – Drawer Front view

Each MATRIX cabinet drawer contains multiple storage bins (except for type "00" drawers). There are several bin sizes available for each drawer height, some bins are wider than others and some are deeper. The type of bins installed in each drawer can be changed according to the parts stored in them.
The number of bins in each drawer varies according of the size of bins chosen.

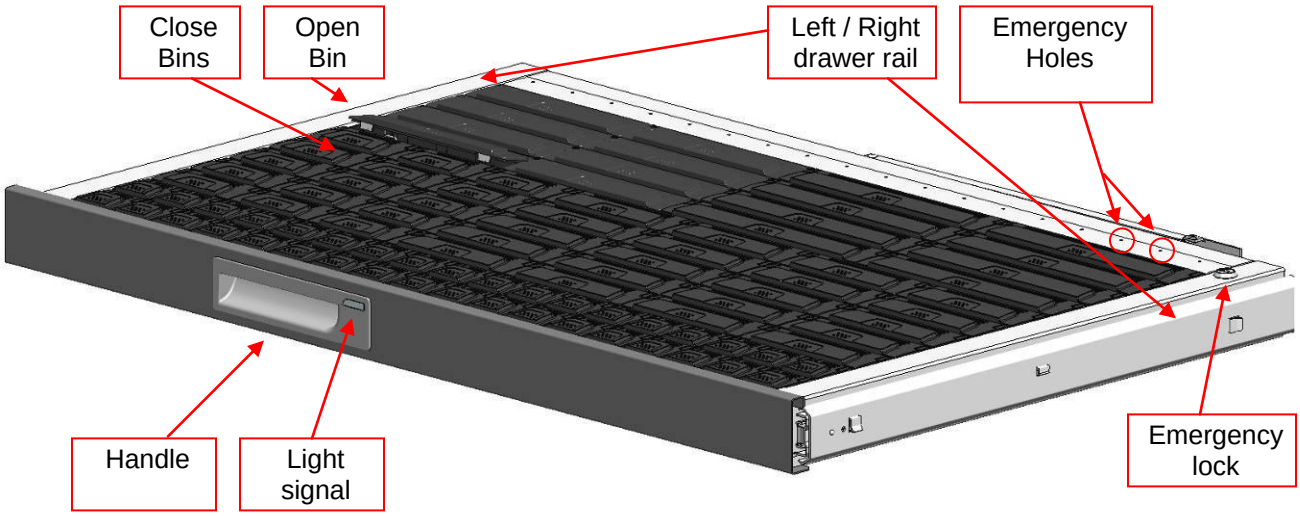


Figure 7 - Drawer Parts - Front view

On the front of the drawer (as displayed in Figure 7) you can see the following components:

- **Handle** – Pull to open drawer when unlocked.
- **Light signal** – the drawer light has 3 states:
  - **On** – Drawer is locked.
  - **Blinking** – the drawer is waiting to be opened (the required item is stored in this drawer). Drawer is not closed and should be closed after taking out the item (The system will not accept new commands whilst the drawer is open).
- **Left / Right drawer slides** – A 2 part telescopic removable drawer slide – on both left & Right sides the outer part clicks into the holes in the cabinet chassis and the inner part connected to the drawer itself can slide and lock into the outer part.
- **Bins** – The storage bins come in different sizes. See Figure 9 for available bin types.
- **Emergency lock** – For emergency or power failure, it is possible to use a key to unlock all bins.

- **Emergency opening holes** – After unlocking the drawer's emergency lock key, the operator can choose a column of bins to open by sticking a thin screwdriver into the corresponding hole and pressing down on the internal lever. All bins on the relevant column will open. Note: To open Bins with dual locking (2 latches) press more on the lever corresponding to the column where each latch is located. (See detailed instructions for manual operations in chapter 6.4.1)

2.4. Description of Drawer Parts – Drawer Back view

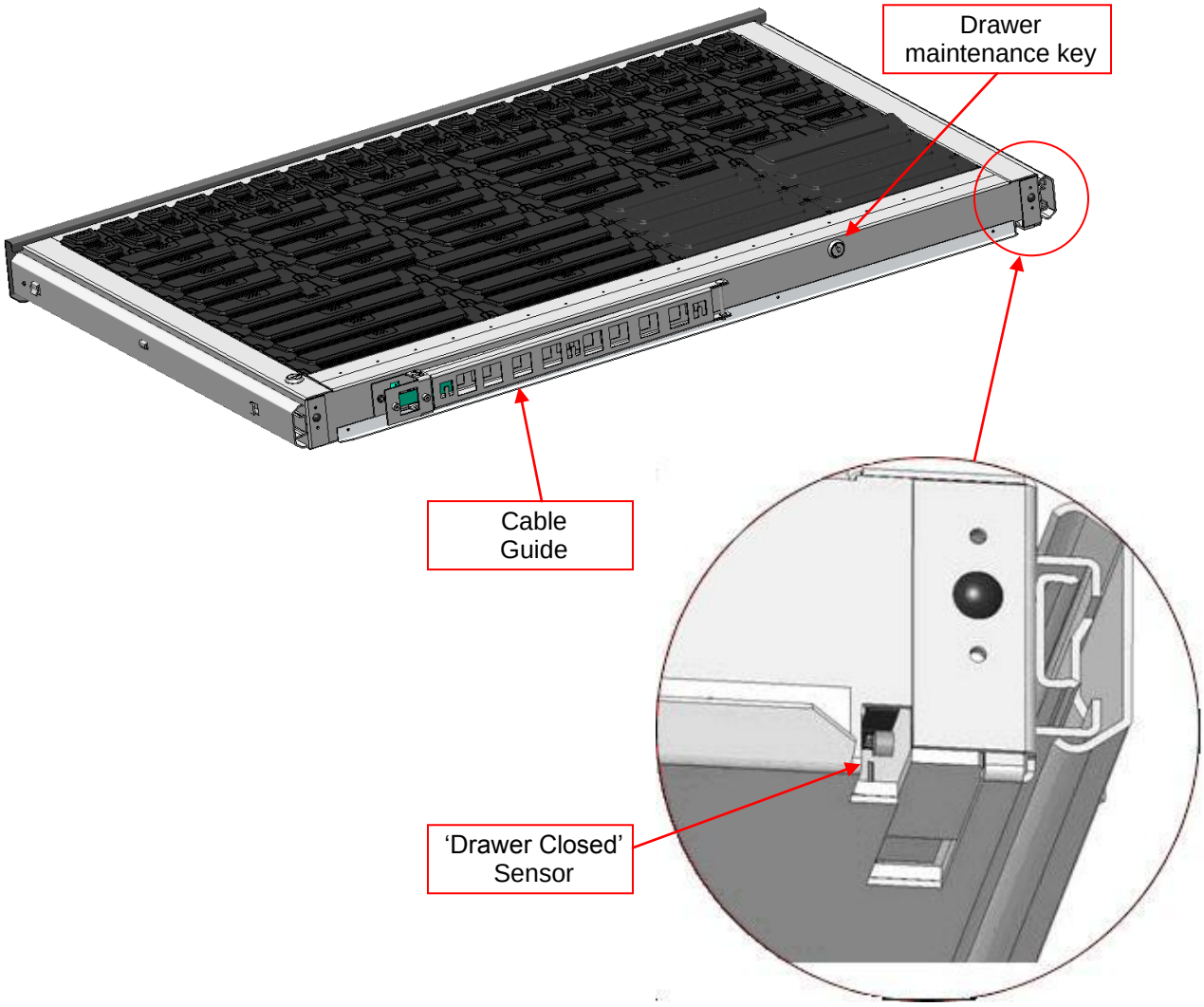


Figure 8 - Drawer Back view

On the back of the drawer (as displayed in Figure 8) you can see the following components:

- **Cable Guide** - Holds the cable that connects the Drawer Board and Distributor Board. When a drawer is being opened, the cable guide moves to allow the flat cable to stretch with the opening drawer.
- **Drawer maintenance key** – The drawer is constructed of 2 main parts: 'Outer' and 'Inner'. The 'Outer' is the drawer's infrastructure while the 'Inner' includes all the electronics, latch actuators and bins. The drawer's Inner and Outer parts are locked together. Use the '**Drawer assembly key**' to unlock for maintenance if necessary.
- **'Drawer Closed' sensor** – A sensor located on the bottom corner of the drawer, indicates when the drawer is closed. When the sensor's wheel is 'up' – drawer is closed. When the sensor's wheel is down – the drawer is open.

2.5. Bin Types

The following table shows the available bin options:

Bin code	Cells (W x D)	Bin dimensions [internal] mm (H x D x W)
50A	1x1	50x39x42
50B	1x2	50x39 x92
50C	1x3	50x39 x142
50D	1x4	50x39 x192
50E	1x5	50x39 x242
75B	1x2	75x39x92
75C	1x3	75x39x142
75G	2x3	75x89x142
75H	2x4	75x89x192
100A	1x1	100x39x42
100J	3x3	100x139x142
100K	4x3	100x189x142

Figure 9 - Bins types

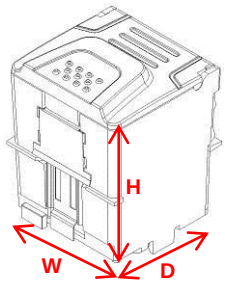
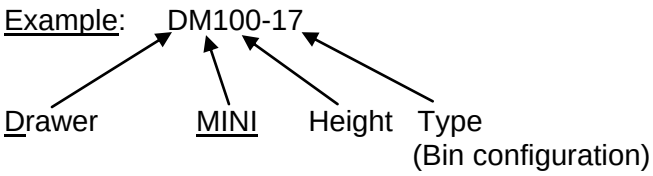


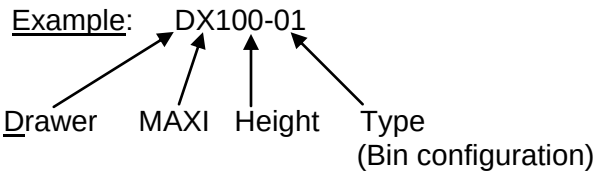
Figure 10 - Bin measurements

2.6. Drawer Types

The different drawer types are categorized with codes.

The **Drawer Codes** are built as follows:





The table below shows the different MATRIX Drawer options:

	Bin Code	50A	50B	50C	50D	50E	75B	75C	75G	75H	100A	100J	100K	TOTAL
Drawer Codes	DM50-00													0
	DM50-11	24	12	8	6									50
	DM50-12			8	8	8								24
	DM75-00													0
	DM75-13						12	8	4	3				27
	DM75-14							16	4	3				23
	DM75-15						18	20						38
	DM75-16								8	6				14
	DM100-00													0
	DM100-17										96			96
	DM100-18										24	8		32
	DM100-19												8	8
	DX50-00													0
	DX50-01	198												198
	DX50-02	36	27	12	18									93
	DX50-03	36	15	20	8	8								87
	DX50-04		33	44										77
	DX50-05				22	22								44
	DX75-00													0
	DX75-04						33	44						77
	DX75-06						18	18	6	9				51
	DX75-07							30	6	9				45
	DX75-08							6	10	15				31
	DX100-00													0
	DX100-01										198			198
	DX100-09										90	12		102
	DX100-10											6	12	18

Figure 11 – Drawer types

On the left column you can see the available Drawer Codes (type). Each drawer code comprises different height and bins configuration. For example, DX50-01 & DX100-01 are identical in bin configuration, but differ in height.

Drawer Type “00” is a drawer with no bins. These types of drawers are used for storage of big items that can’t fit into any bin.

In Figure 12 you can see an example of a drawer configuration. You can see the drawer’s layout with the different bin types (B50A at the front, B50B in the middle and B50C at the back of the drawer).

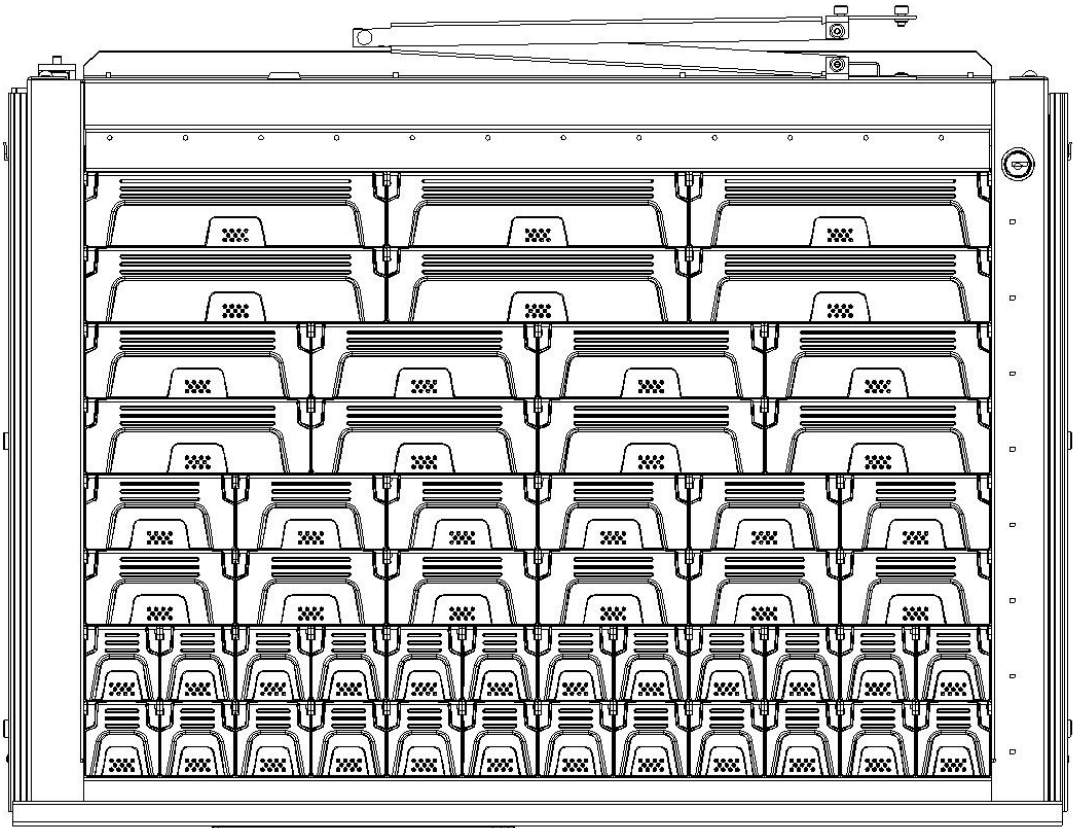


Figure 12 - Example of Drawer layout

2.7. Additional ID Devices

The MATRIX cabinet is equipped with a barcode reader for identification.
For additional security it is possible to add other ID devices such as magnetic card reader and finger print reader. Those extra ID devices will be connected to the computer and ensure user identification.
Assembly suggestion:

- An RF magnetic card reader should be connected to the cabinet’s computer and can be attached under the cabinet hood, just bellow the bar code reader. When the cabinet is closed, the magnetic card should be placed bellow the bar code reader so that the RF reader can identify the user.

- A finger print reader can be attached externally on the cabinet’s hood, to the right of the touch screen (near the key hole). The cable of the finger print reader can go through the same entrance of the touch screen cable.

3. Safety Regulations and Important Warnings

! Please read all operating and maintenance (servicing) instructions in the literature accompanying this equipment. If these instructions are not followed exactly, possible bodily injury may occur.

! The MATRIX cabinet is suitable for mounting on concrete or other non-combustible surface only. Make sure that only fuses with the specified rated current and of specified type are used for replacement.

! The use of repaired fuses and the short-circuiting of fuse holders must be avoided.

! To avoid shock, do not perform any non authorized servicing. Disconnect the product from the power line before removing covers. Any adjustment and maintenance of the opened device should be done only while the device is disconnected from its source of power and should only be performed by qualified personnel.

! Opening the electrical board for replacing fuses or air fan must be performed by a licensed electrician.

! Slide/Rail mounted equipment is not to be used as a shelf or as a work space.

! Avoid opening more than one drawer at the same time. Opening multiple drawers at the same time may cause the cabinet to flip over.

3.1. Cabinet Safety / Warning Labels

- Sticker on cabinet's side: Do not open more than one drawer at the same time to avoid flipping over

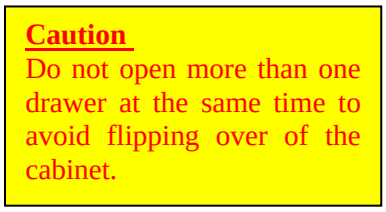


Figure 13 – High voltage

- Sticker under the hood, on electrical board: Unplug cabinet from outlet before disconnecting / connecting any internal electrical connections

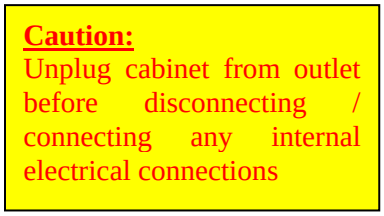


Figure 14 – High voltage

4. Cabinet Connections

Before any maintenance procedure make sure to read all safety regulations and warnings in **Chapter 3**.

4.1. Network connection

4.1.1. Network connection – Single Cabinet

When installing a single cabinet, network connection is simple. Connect a network cable from the network Input socket (Figure 6) to the nearest network wall socket (RJ-45) outlet.

4.1.2. Network connection – Pod Cabinet

A Pod cabinet comes without a computer and it functions as an additional set of drawers connected to "TOUCH" cabinet/s either directly or via the network.

When connecting a Pod cabinet to 'TOUCH' cabinet/s, the network cable can be connected in 2 ways:

1. **Connection through the network:**

   Connect the network cable from the POD cabinet's network Input socket (Figure 6) to the nearest network wall socket outlet (like connecting a single cabinet). In this configuration, the commands from the 'TOUCH' cabinet will be communicated through the network.

Or

2. **Connection through a 'Switch Box' in the TOUCH cabinet:**

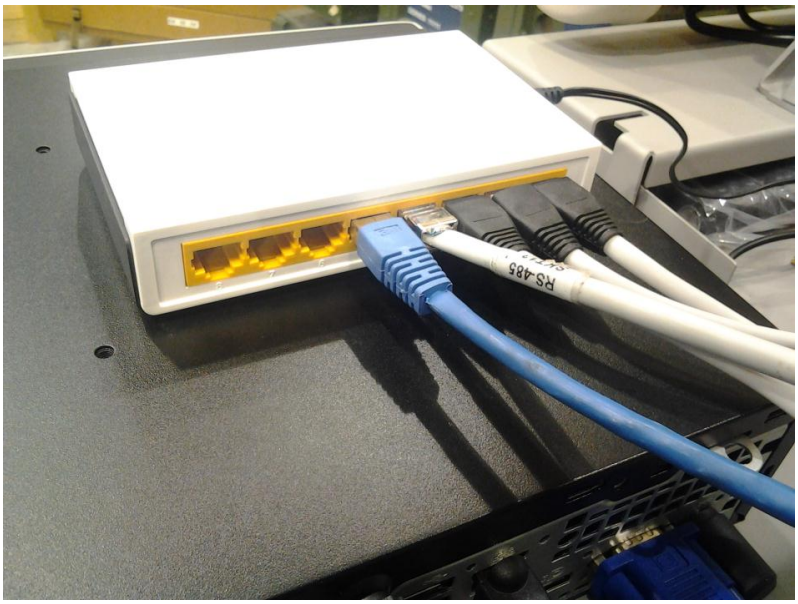


Figure 15 – The Switch Box in the TOUCH cabinet

2.1. Connect a network cable from the 'TOUCH' cabinet's network Input (Figure 6) to the nearest network wall socket outlet.

2.2. From the back of the 'TOUCH' cabinet, press with your finger to break the little metal plate covering the access window to the 'TOUCH' cabinet's panel (Figure 16).

Figure 16 - Press with your finger to break the little metal plate

2.3. Connect a network cable from the ‘POD’ cabinet’s network Input to the ‘TOUCH’ cabinet’s Switch Box – Pass the cable through the back hole you just revealed.

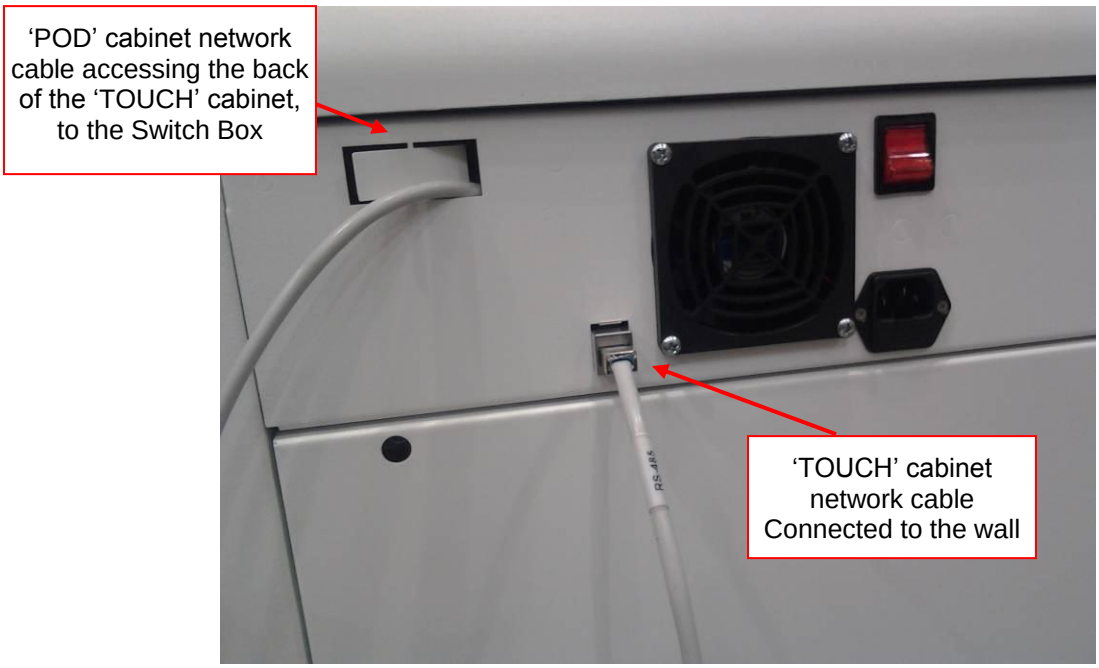

‘POD’ cabinet network cable accessing the back of the ‘TOUCH’ cabinet, to the Switch Box
‘TOUCH’ cabinet network cable Connected to the wall

Figure 17 - Network cable from the 'POD' cabinet connected to the ‘TOUCH' cabinet's switch box

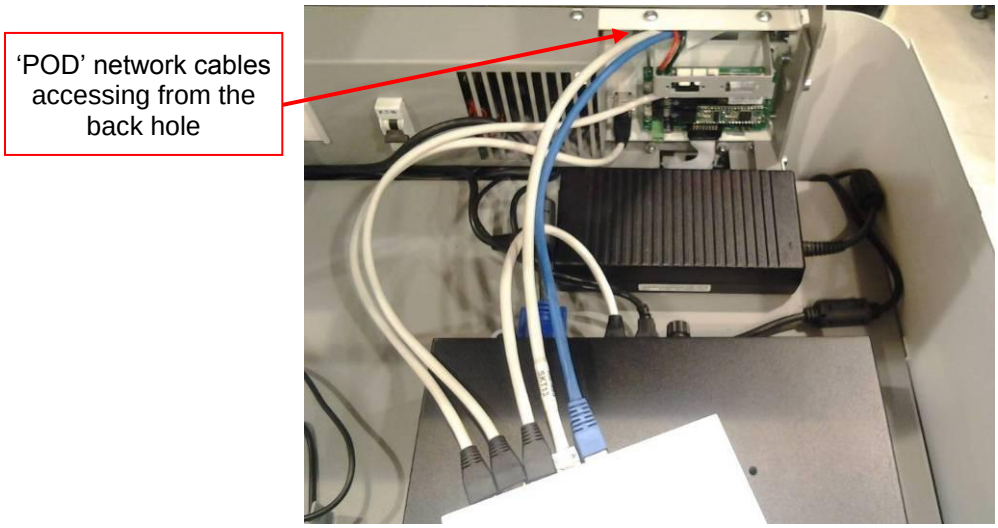


Figure 18 - Connecting 'POD' network cable to 'Switch Box'

2.4. Connect the 'POD' cabinet's network cable to any of inputs 4,5,6,7,8, of the 'Switch Box' on the 'TOUCH' cabinet. You can connect up to 5 'POD' cabinets to a 'TOUCH' cabinet in this configuration.

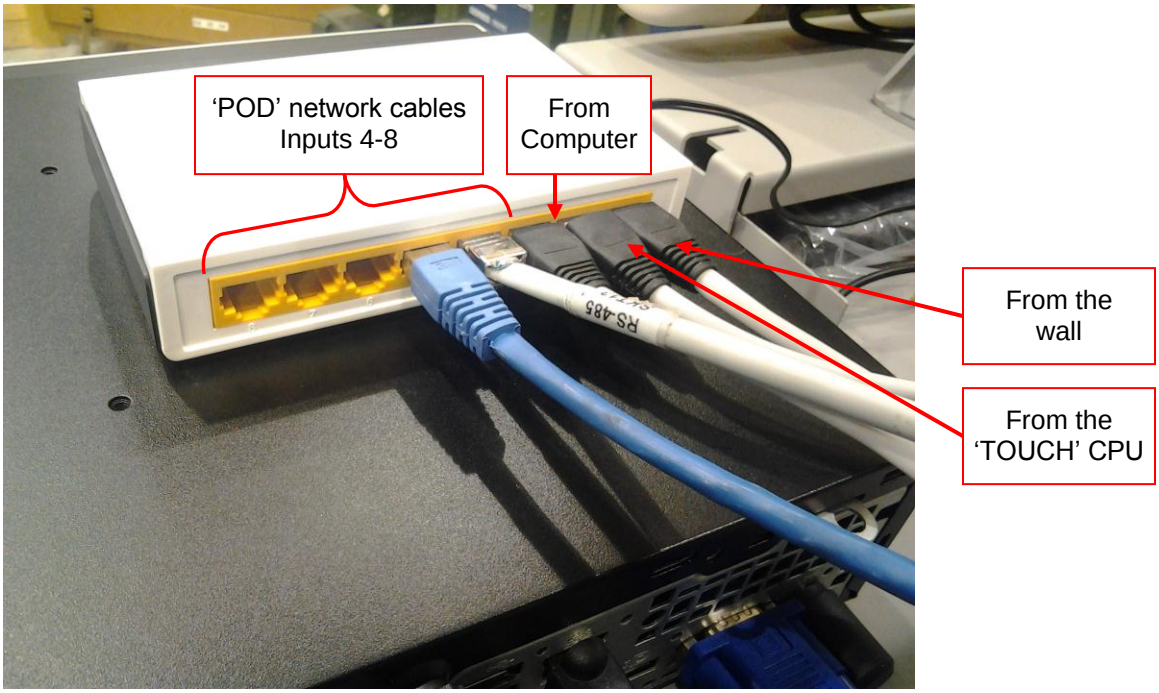


Figure 19 - Switch Box inputs

4.2. Power connection

4.2.1. Mains Power connection

Each cabinet, whether TOUCH or POD, should be independently connected to a mains power outlet. Connect the power cable from Mains power socket (Figure 6) to the nearest power main supply outlet.

4.2.2. UPS / Computer & Screen Power connection (for TOUCH cabinets)

If a UPS unit is supplied, the computer and touch screen power cables should be connected to the UPS. The UPS unit is connected to the power inlet (see Figure 3).
In case there is no UPS unit installed, the computer and the screen should be connected directly to the power inlets on the cabinet's electric board located under the hood (see Figure 3).

4.3. Power On

Once all the above steps have been performed, turn on the power, according to the following steps:

1) Make sure power supply meets the cabinet's requirements (see voltage requirements sticker on cabinet's back).
2) Switch on the main power switch on the back of the cabinet (See Figure 6).
3) Open cabinet's top hood.
4) If a UPS unit exists - Press the 'ON' button of the UPS. The UPS 'On Line' green light will turn on.
5) Switch on the computer.
6) Switch on the 24v unit's power from the switch on the electric panel under the cabinet's top hood (See Figure 3).

5. Maintenance

In this section you will find instructions for useful maintenance procedures.

Before any maintenance procedure make sure to read all safety regulations and warnings in **Chapter 3**.

5.1. Replace / Change Bins

Replacement of bins should only be performed by or under the supervision of an authorized service representative and in accordance with this Service Manual. Incorrect installation of a bin could damage the bin and/or the functioning of the drawer.

As described in paragraph 2.6, the cabinet originally arrives with the drawers and bins installed. Each drawer type has a different layout of bins installed. If necessary, it is possible to replace bins in a drawer, for example if you need to store a bigger item. However, there are some restrictions:

- You can only replace bins of the same height.
- You can only replace bins on the same row i.e. same depth (Replace a few narrow bins with one wider bin or vice versa) – check out the existing bin types of paragraph 2.5.

To replace bins follow the next steps:

First you need to pull out the existing bins.

1) Open the bin you wish to replace.
   If the bin is not opening, Use a screw driver to break the bin's cover to open.

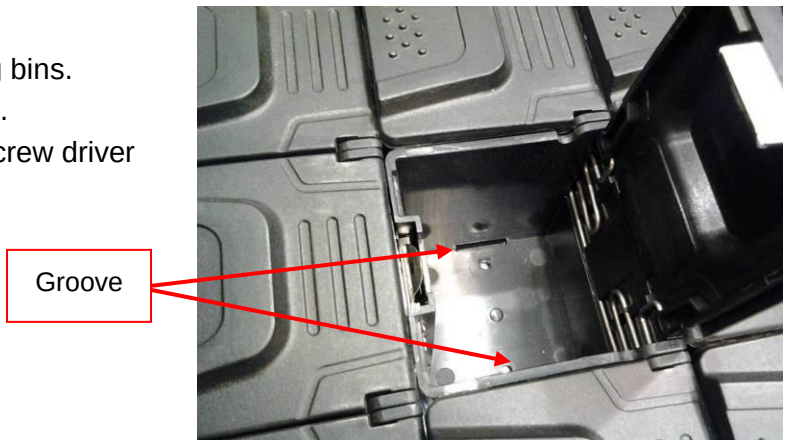


Figure 20 - Breaking the bin (1) - grooves

Now, we need to break the bin.

Note: This bin will be destroyed and cannot be used anymore.

2) Insert a screwdriver into the little groove on the bottom of the bin.

Figure 21 - Breaking the bin (2)

Figure 22 - Breaking the bin (3)

3) Use a hammer to pound on the screwdriver and break the grooves on both sides. This action will break the bin.
4) After breaking the bin, pull and lift the broken bin out of the drawer.

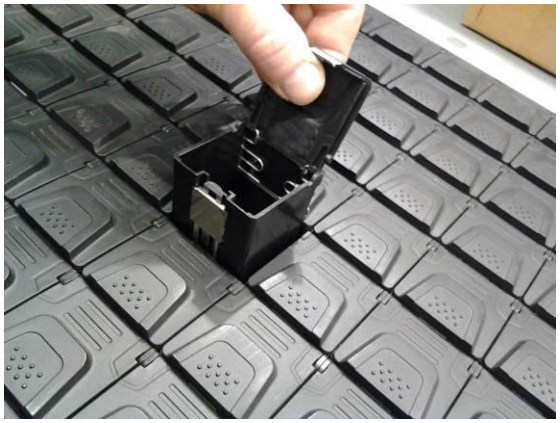


Figure 23 - Pulling out the broken bin

5) Repeat steps 1-4 to remove more bins if required (If you wish to replace 2 short bins with a longer one for example).

The bin has a metal “tongue” and under each bin passes the drawer’s inner actuator (see Figure 24). The vertical groove on the inner actuator passes between the bin and the bin’s bottom tooth.

To insert a new bin into the empty slot:

6) Hold the new bin with your hand while your finger is pressing and holding back the metal “tongue” against the bin’s side – see Figure 24 . the bin’s bottom tooth will protrude outwards. By holding back the tongue while inserting the bin, the bin’s bottom “tooth” doesn’t get stuck in the drawer’s inner actuator.

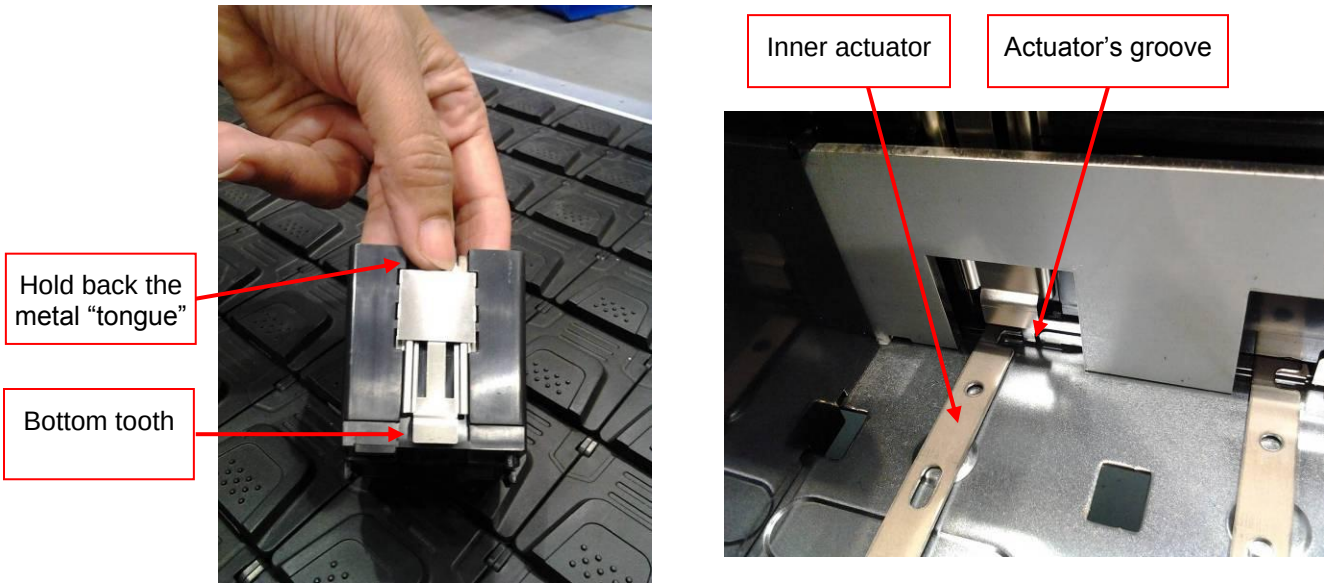


Figure 24 – The Inner Actuator

7) Use the handle of a hammer or other tool and push the bin down into place until you hear a click.

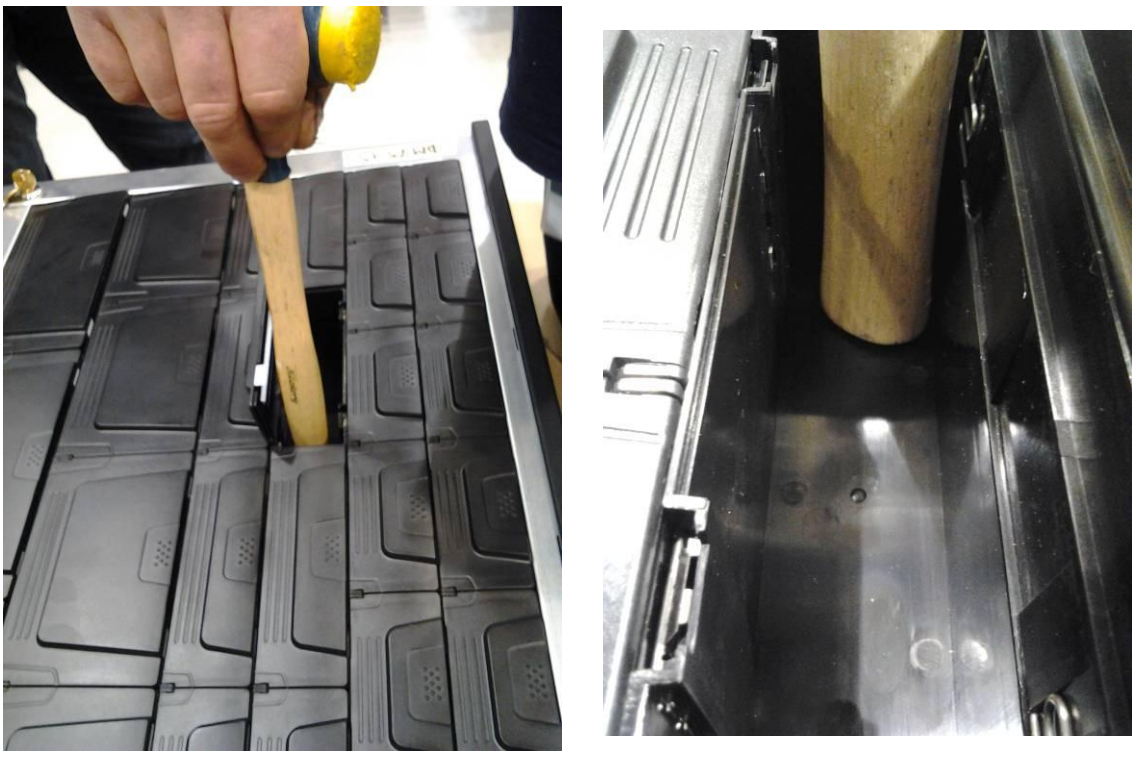


Figure 25 - Push the bin until you hear a click

5.2. Replace Bin's Lid

Where the bin's lid is damaged or not functioning, it is sufficient to replace the lid without replacing the whole bin.

To replace the bin's lid follow the next steps:

1) Open the bin lid you wish to replace. If the bin doesn't open, use a screwdriver or other tool to open the lid (If no other option works, break the bin's lid to open it).

Figure 26 - Open the failed bin lid

2) The lid is connected to the bin by 2 metal clips, one on each side. To remove the lid, pull the clips inwards to separate the lid from the bin.

Figure 27 - Pull the clips inwards to remove the lid

3) Repeat step 2 on both sides and remove the failed lid.

Figure 28 - Remove failed lid

4) To connect a new lid just place the new lid into position and insert the metal clips to connect.

Figure 29 - Connect the new lid

5.3. Replacing a Distributor Board

Sometimes you need to replace the Distributor Board in case of board failure (See Distributor Board - Figure 6).

Replacement of electronic boards should only be performed by or under the supervision of an authorized service representative and in accordance with this Service Manual. Incorrect installation of a board could damage the board and/or the functioning of the cabinet.

1) To replace the distributor board, open the back of the cabinet.

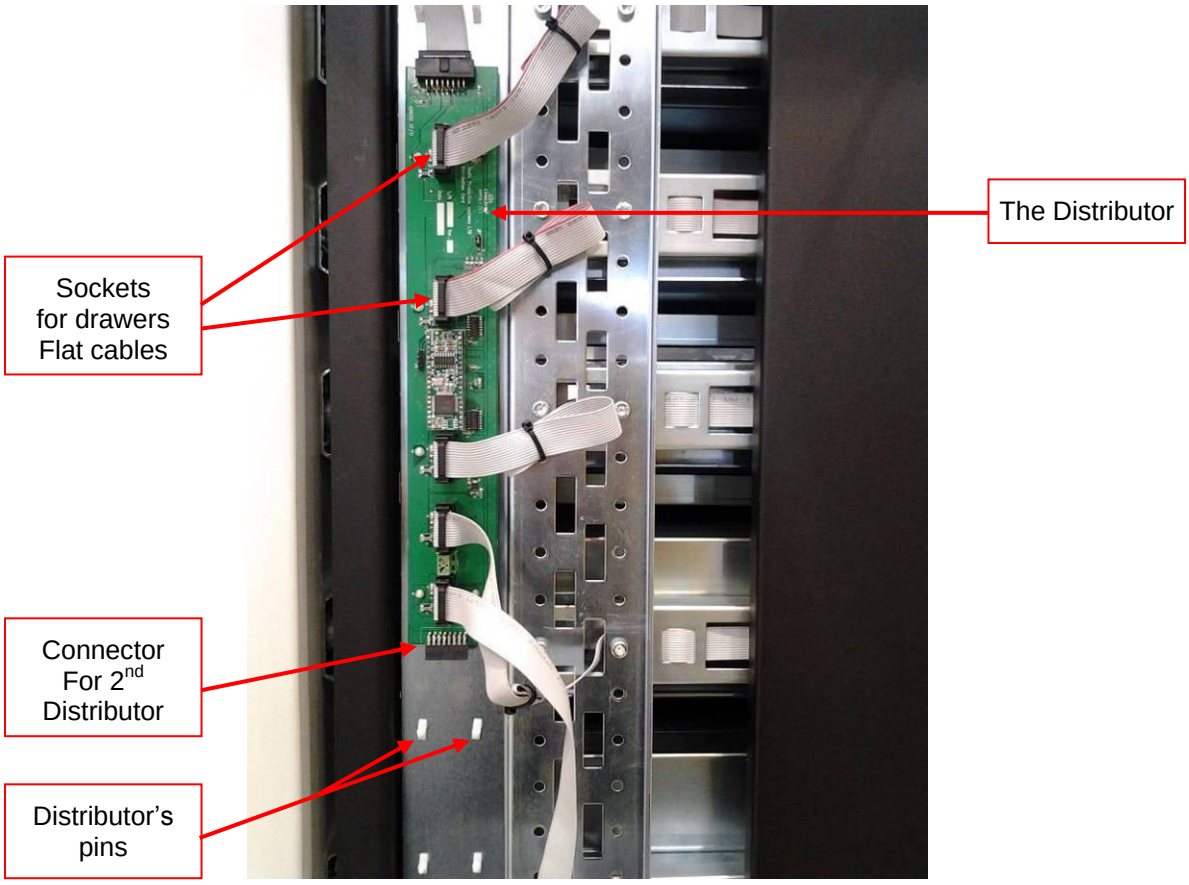


Figure 30 - The distributor

2) The drawers are connected to the distributor board (5 drawers max) by flat cables. Before replacing the distributor board, you must release all flat cables connected to the board you wish to replace. Disconnect all flat cables from their sockets.

3) Each distributor board has a max of 5 sockets for 5 drawers. When using more than 5 drawers in a cabinet, a second distributor board is added below the first board and the two distributor boards are connected to one another.

   In order to replace a distributor board, in case of 2 distributor board, you need to disconnect the 2 boards from one another. Gently pull the bottom board toward the floor to disconnect.

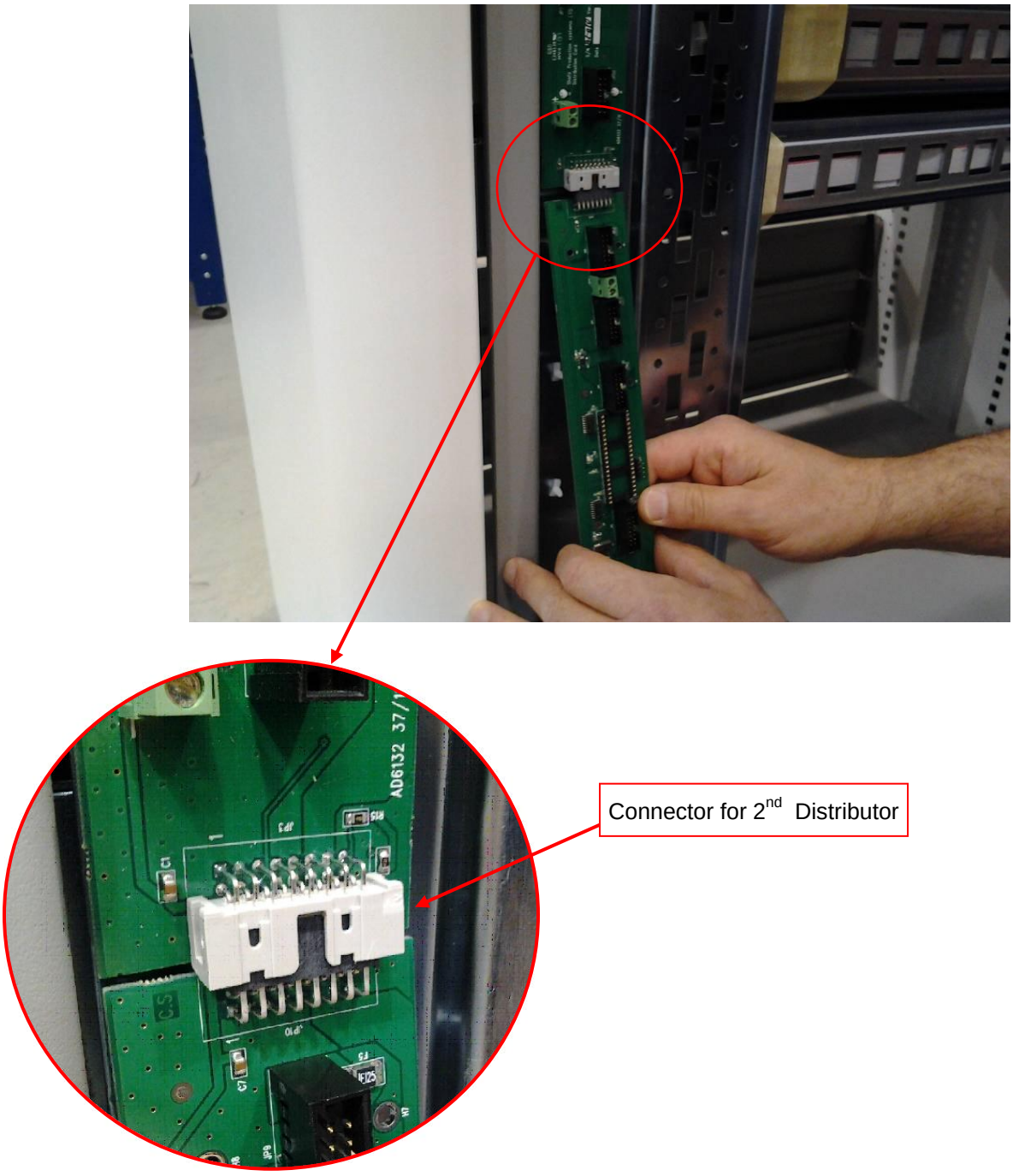


Figure 31 - Connects the 2nd Distributor board to the existing distributor

4) When released, remove the failed distributor board and replace with a new one.
5) In case of 2 distributor boards, connect the 2 boards to one another and then press the new Distributor against the white pins to lock in place.

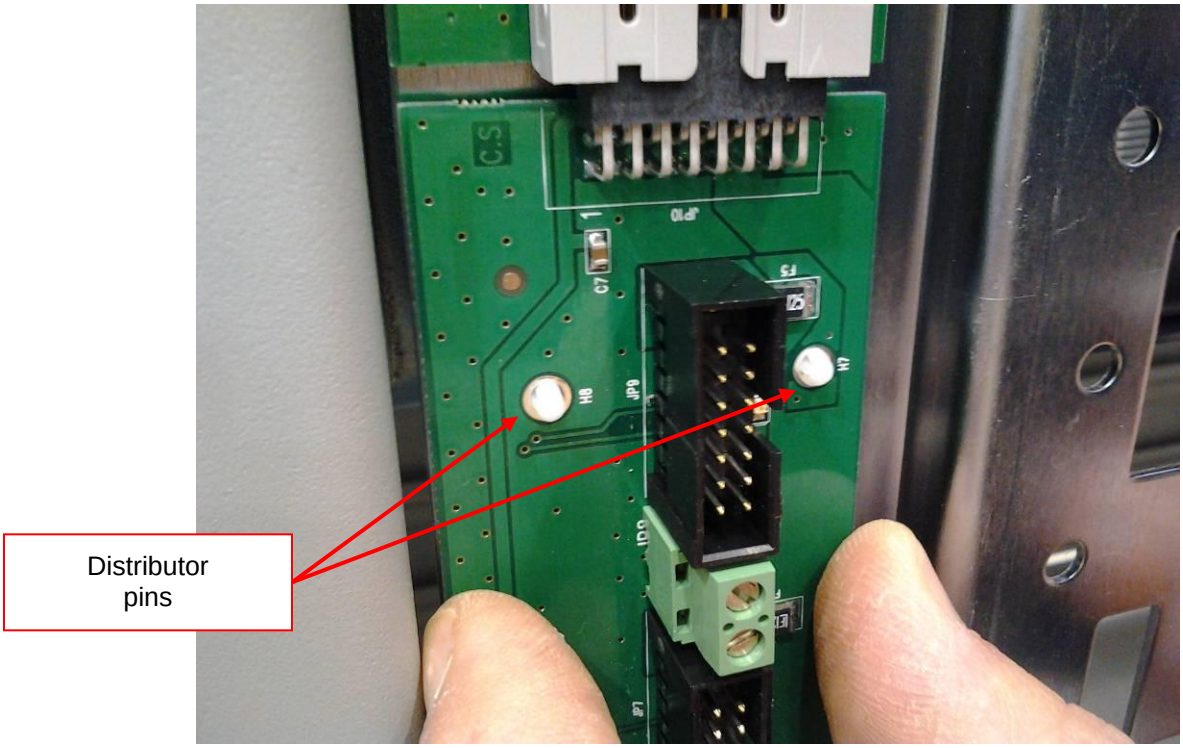


Figure 32 - Press to lock all pins on Distributor

6) Reconnect all flat cables to the distributor boards.

6. Support & Troubleshooting

Before any maintenance procedure make sure to read all safety regulations and warnings in **chapter 3**.

6.1. Support

MATRIX has been designed to allow most users to service the system independently, subject to suitable training at time of installation. Most minor parts can be replaced on-site in a relatively short time. Support is offered under the terms of the MATRIX Limited Warranty Note and any further agreement offered by the local CTMS service agent.

6.2. Diagnostics with MATRIX Utility software

1) Double click on the MATRIX Utility software icon on your desktop.

2) Click on 'Setting' tab and enter the IP and communication port:

   HOSTIP = 192.168.127.10

   PORT = 8001

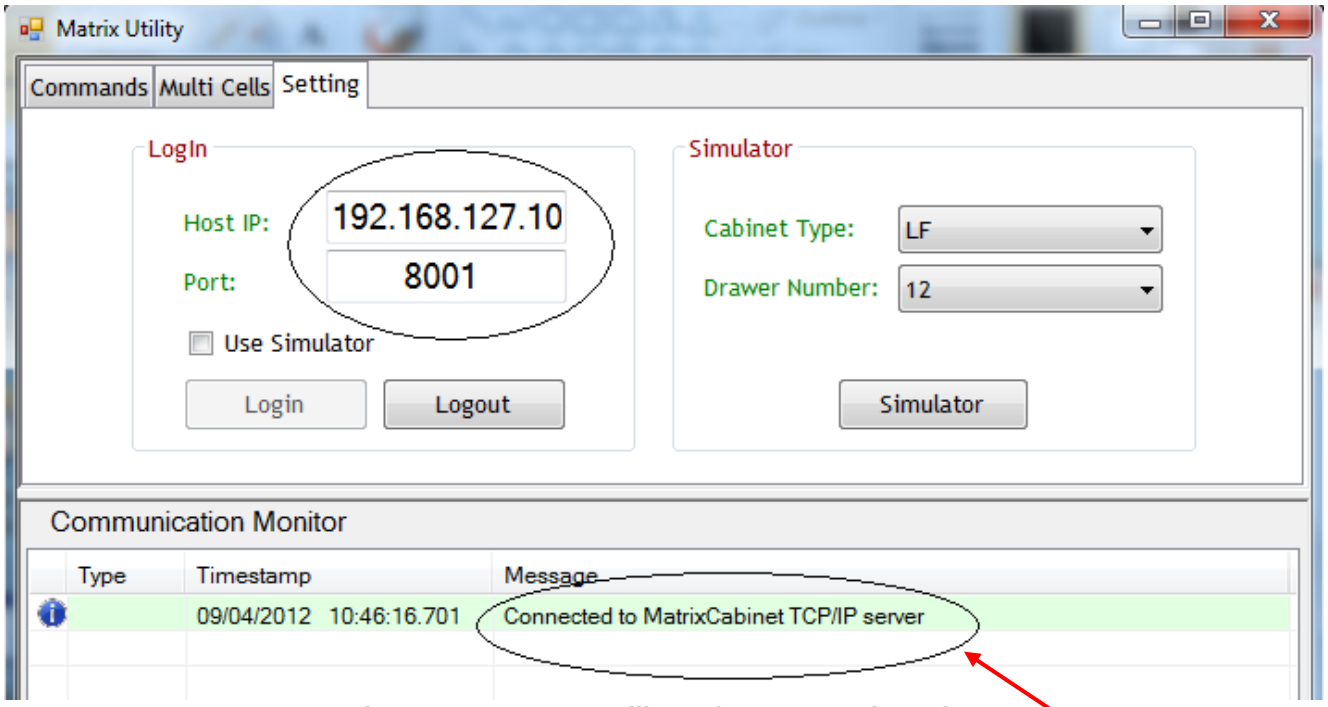


Figure 33 - MATRIX Utility software – Setting tab

3) Press on 'Login' button. Check for a connection approval message on the communication monitor.

4) Click on ‘Commands’ tab and enter select the first drawer
   Drawer (Y): 1
   Column (X): 1
   Row (z): 1

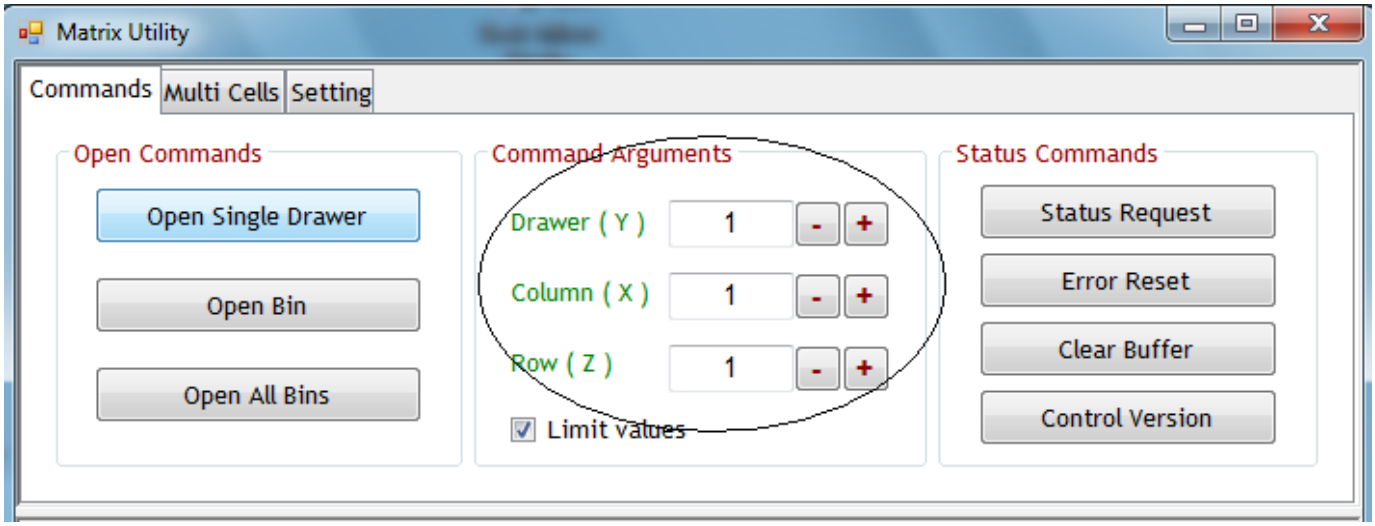


Figure 34 - MATRIX Utility software – Commands tab

5) Press on ‘Open All Bins’ button and then on ‘Open Single Drawer’.
6) Wait for a second for lock release and drawer LED blinking.
7) Open drawer.
8) Check that all bins were opened. Close all bins and close drawer.
9) Check that all the LEDS of all the drawers are ON steady.
10) Repeat test.
11) Move to next drawer by pressing the ‘+’ sign near the Drawer (Y) label.
12) Repeat test for all drawers.

13) Click on ‘Multi Cells’ tab to perform a selective opening of bins and drawers.

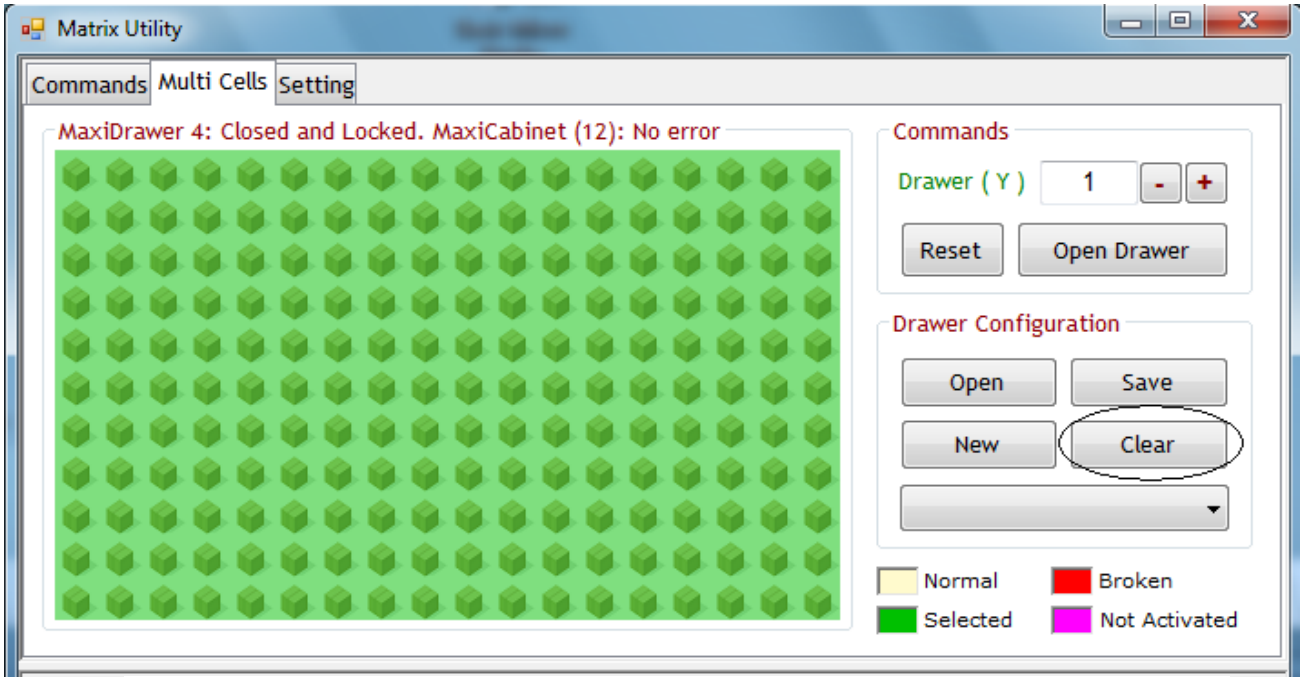


Figure 35 - MATRIX Utility software – Multi Cells tab

14) Press the ‘Clear’ button.

15) To open the first drawer, press: Drawer (Y): 1

16) Press on the bins to choose bins to open. The selected bins are marked in green.

17) Press the ‘Open Drawer’ button.

18) Wait for a second for lock release and drawer LED blinking.

19) Open drawer. Make sure the LED light turn off.

20) Check that all the selected bins were opened. Close bins and close drawer.

21) Check that all the LEDS of all the drawers are ON steady.

22) Repeat test.

23) Move to next drawer by pressing the ‘+’ sign near the Drawer (Y) label.

24) Repeat test for all drawers.

6.3. Support for parts under local warranty

Some parts of the MATRIX cabinet are under an OEM worldwide warranty and a local technician should be contacted in case of a failure. These items are **not supported by IMC local support center**.
The manufacturer, model and serial number are written on a label on the part and should be quoted when seeking service:

Part	Label position
UPS	Label on bottom
Bar code reader	Label on handle
Screen	On the back
Computer	On the side

6.4. Troubleshooting

MATRIX has been produced to the highest of standards. As with any mechanical or electrical device, a malfunction could happen, so it is wise to be prepared. Different environmental factors, such as dust, oil and dirt, and the level and conditions of use, can affect performance and reliability. In this section we canvass a number of troubleshooting scenarios, to help identify and resolve problems that may arise.

The attached troubleshooting table describes several common problems. Follow the steps (in the suggested order) to try and fix the problem:

6.4.1. Power Failure – Manual Override

In the event of a power failure, the UPS will continue to provide temporary power to the machine pending a controlled power shutdown. When this occurs, it may be necessary to access items stored in the machine.

Each drawer has a manual override mechanism, to ensure continued access to stored items, even in the event of a power failure.
To open a drawer manually follow these steps:

1) Lift the cabinet's top hood and turn the 'Drawers release lock' key (see Figure 3) to release all drawers.
2) Pull relevant drawer handle to open.
3) Relock the Drawers release lock after each time one drawer is pulled out.

! Avoid opening more than one drawer at the same time. Opening multiple drawers at the same time may cause the cabinet to flip over.

4) Turn drawer's 'emergency lock' (Figure 7) by 90° - the key can't be pulled out for safety.

Figure 36 - Turn drawer key by 90°

5) Use a 3mm screwdriver or other tool to unlock the required bin. Insert the screwdriver into the 'emergency opening holes' (See Figure 7) corresponding to the bin you need to open – The whole column of bins will be open. See Figure 37.

   To open a single pitch bin (one latch only) – Only one hole is required.

   To open a double pitch bin (2 latches) – 2 holes should be pressed. Press the holes on both ends of the bin (left end and right end holes). See Figure 37 and Figure 38.

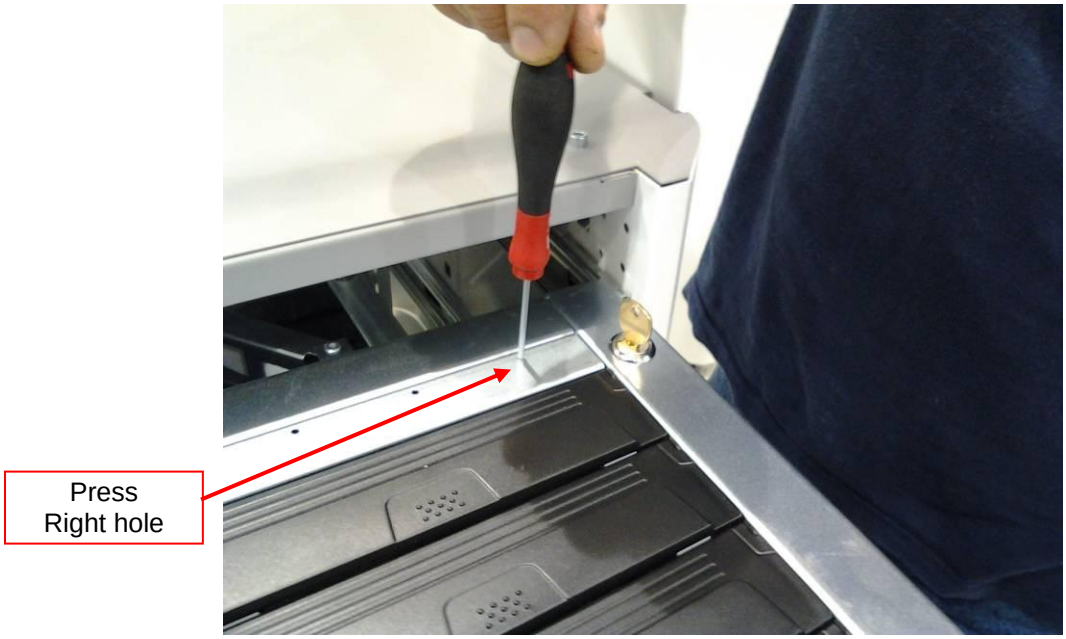


Figure 37 - Use a screwdriver to press the holes – right hole

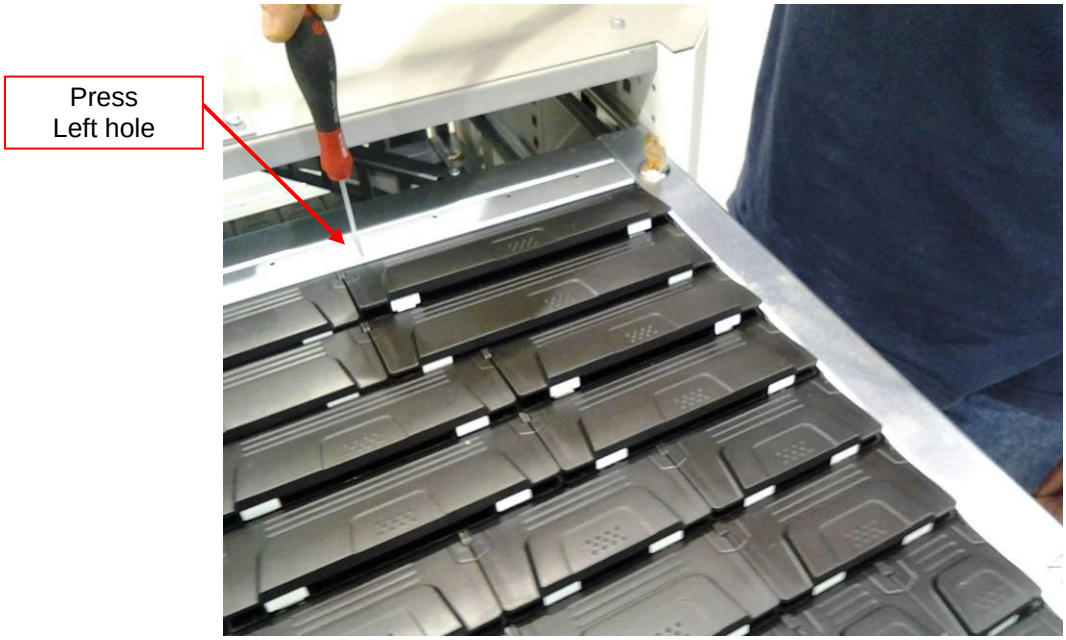


Figure 38 - Press the second hole on the left end to open the bin

6) All bins on the relevant column will be opened. Take the required item from the bin.

   Note: Items removed during manual override should be recorded in the management system once power resumes, in order to prevent stock discrepancies.

7) After the required item was removed, turn the emergency lock back to its original position and remove key.

   We highly recommend keeping the key/s in a safe place, known to the shift supervisor.

8) Manually close all open bins.

9) Push the drawer to close.

6.4.2. Manual opening of drawers

Use the 'Drawers Lock key' located on the back of the cabinet (see Figure 3) to manually release lock for all drawers.

! Avoid opening more than one drawer at the same time. Opening multiple drawers at the same time may cause the cabinet to flip over.

1) Insert key vertically (as described in Figure 39)

2) Turn key 90° to release lock (Figure 40)

   If lock hasn't been released, use a screwdriver to gently pound on the metal tongue below the key, in order to release the lock.

Figure 39 - Drawers Lock key in closed position

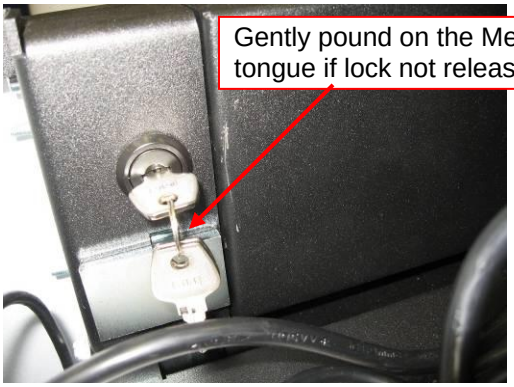


Figure 40 - Lock key horizontal to release lock

3) Perform the required maintenance work and relock drawers when done by turning the lock key back to it's vertical position. Remember to always remove the key when done (Key can be pulled out only when drawers are locked).

6.4.3. Drawer Handle Assembly

1) To remove handle - Lift the handle from the bottom up and pull out to remove.

Figure 41 - Drawer handle assembly

2) Disconnect the cable coming from the 'Inner' to the handle.

Figure 42 - Drawer Handle wiring

3) To return the handle – Connect the cable to the handle's connector.
4) Insert the top of the handle into place first and then press in to secure.

6.4.4. Replace Barcode reader

1) The barcode reader is located under the cabinet's hood - Open hood to reveal barcode reader.
2) Cut the T-rap holding the reader in place.
3) Disconnect the cable coming from the computer to the barcode reader.

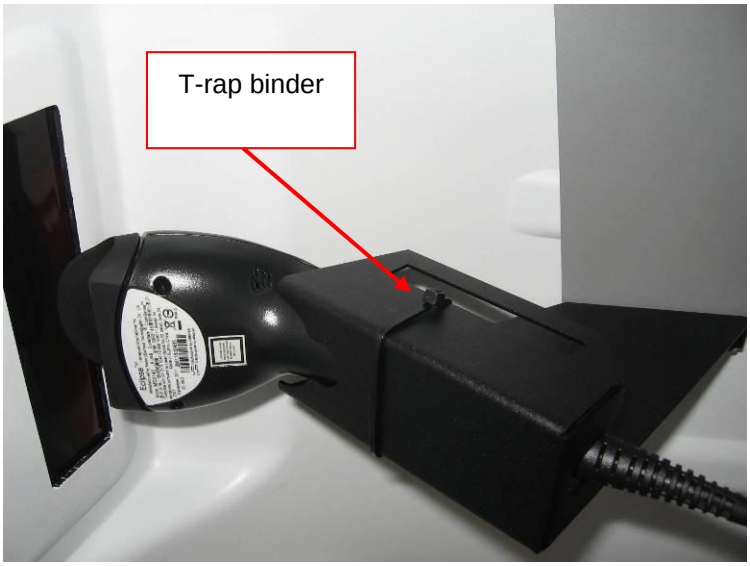


Figure 43 - The barcode reader

4) Remove failed reader and connect the new reader to the computer.
5) Fasten the reader with a new T-rap binder to hold it in place.

6.4.5. Electric board Replacement

The electric board is located under the cabinet's top hood (see Figure 3). When failed, the electric board can be disassembled and replaced.

1) Use an Ellen key to unscrew the 2 screws – one on each side of the board to remove it.
2) Remove the failed electric board and secure the new board into place.

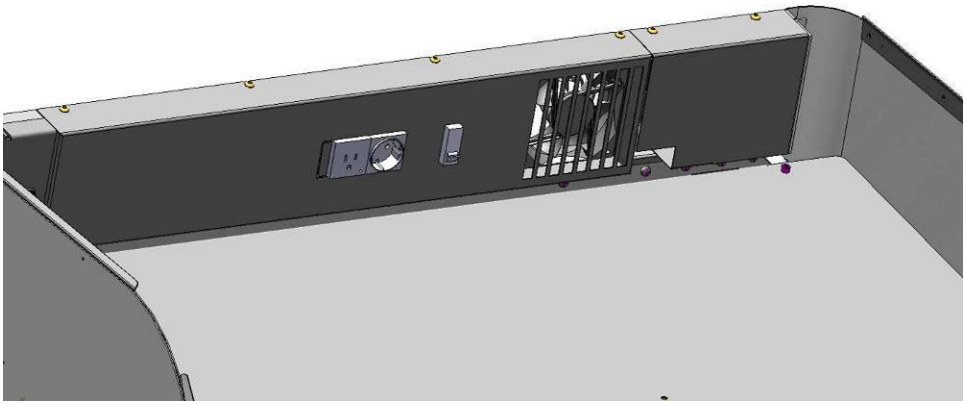


Figure 44 - The Electric board

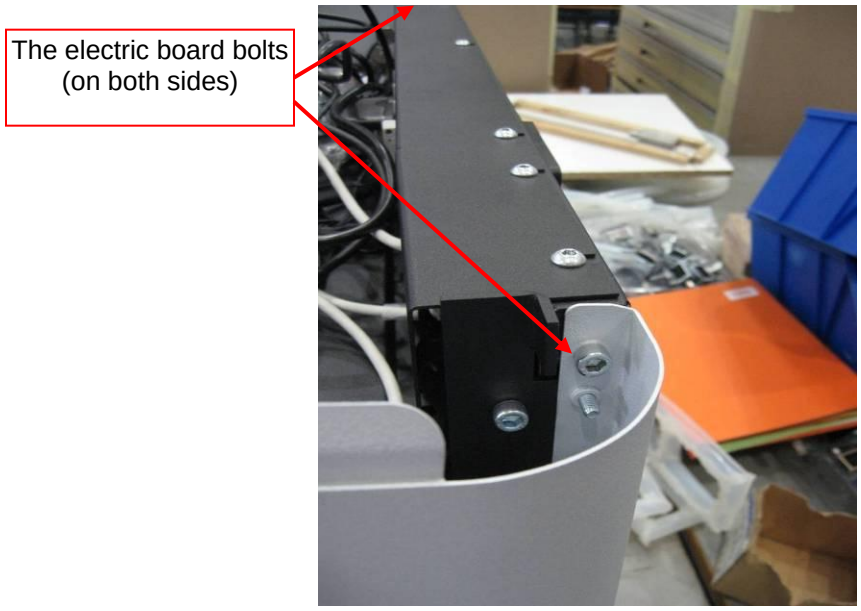


Figure 45 - Unscrew the 2 bolts – one on each side of the board

6.5. Replacing fuses

! Warning - Opening the electrical board for replacing the fuses or air fan must be performed by a licensed electrician.

1) Remove the cabinet's electric board cover (Figure 3), to reveal the fuses located near the '24v on/off switch'.

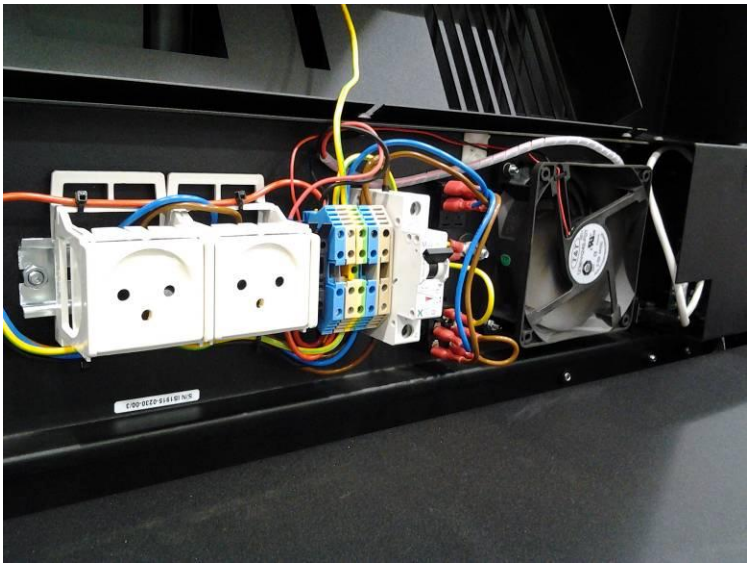


Figure 46 -Remove electric board cover

2) Make sure that the 24v on/off switch is off.

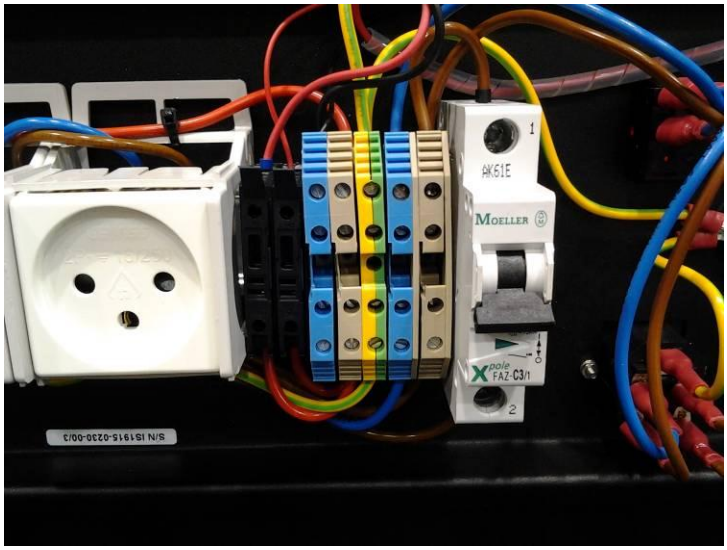


Figure 47 - Make sure 24v switch is off

3) Pull the relevant ‘fuse house’ toward you to open and replace the fuse.

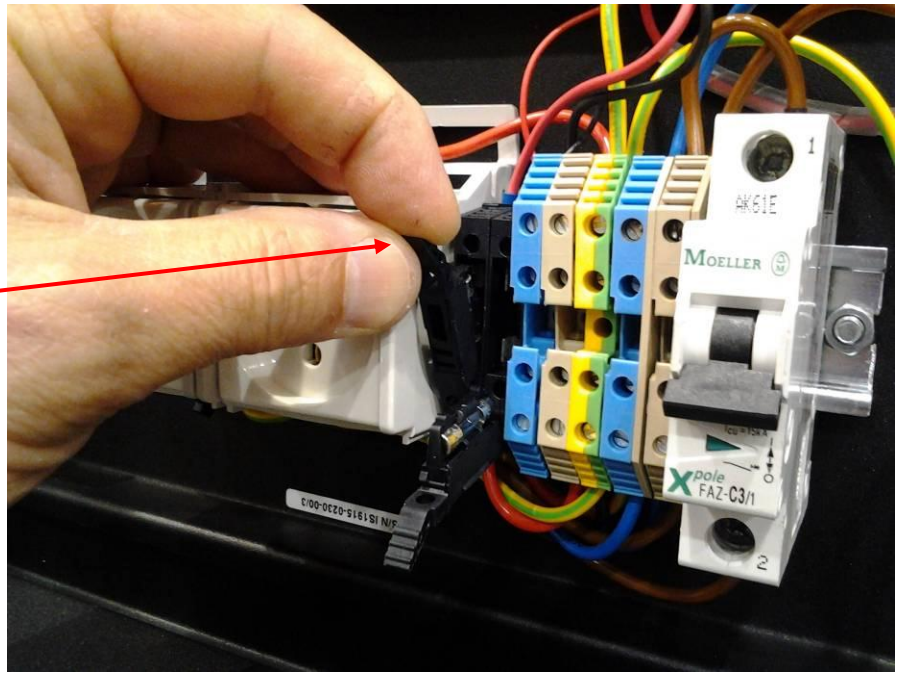


Figure 48 - Pull 'fuse house' toward you to open

4) Replace burned fuse with a new one and close.

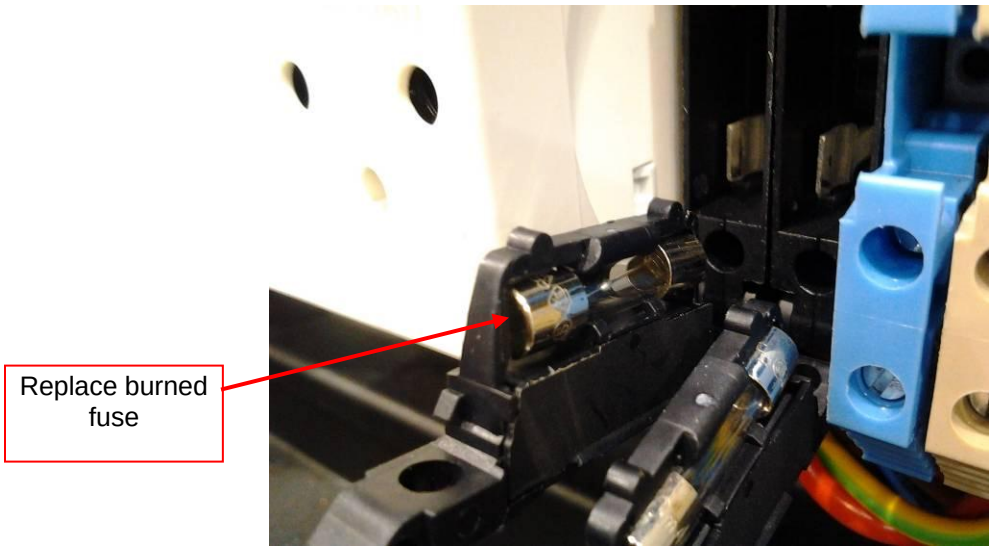


Figure 49 - Replace burned fuse

6.6. Clean / Replace the Air Fan's Filter

The air fan is located on the electric board. Sometimes cleaning the air fan's filter can solve a problem without replacing the whole air fan.
To clean the fan's filter:

1) From the back of the cabinet, remove the air fan cover by pooling the cover with your hand (see Figure 50)

Figure 50 - Remove air fan cover

2) Take the filter out and use pressurized air to clean it.

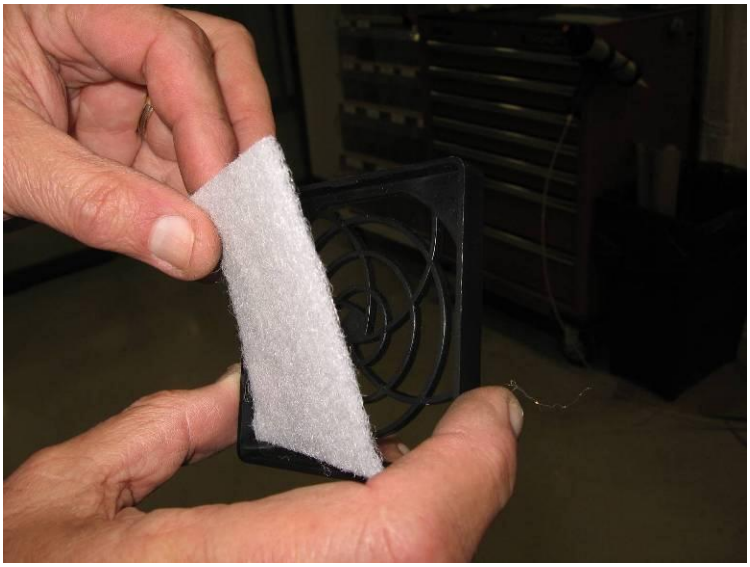


Figure 51 -Clean filter and return to place

3) Replace filter if it is too dirty or worn.
4) After returning the clean filter into place, push fan cover back on.

6.7. Replace Air Fan

The air fan is located on the electric board.

! Warning - Opening the electrical board for replacing the air fan or fuses must be performed by a licensed electrician.

1) Make sure that the power is off.
2) From the back of the cabinet, remove the air fan cover by pooling the cover with your hand (see Figure 50).
3) Remove the cabinet's electric board cover, located under the cabinet's hood (Figure 3), to reveal the air fan located on the right.

Figure 52 -Remove electric board cover

4) Relase the air fan's screws.

Figure 53 - Unscrew fan to remove

5) Disconnect the failed fan's cable and replace with a new fan.

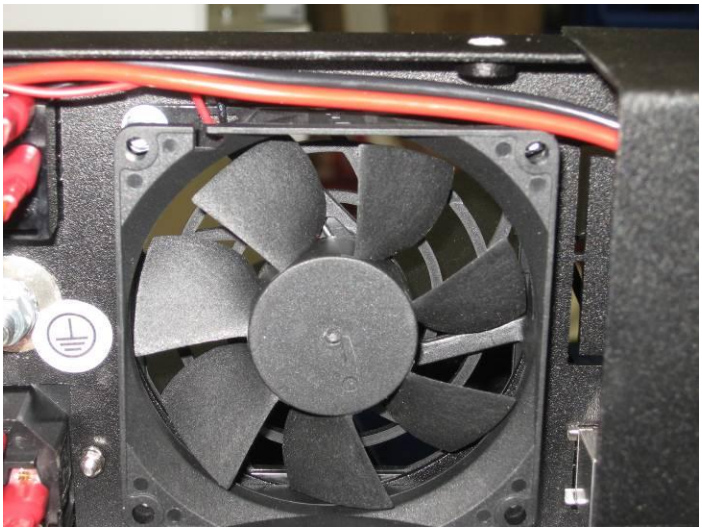


Figure 54 - Pull 'fuse house' toward you to open

6) From the back of the cabinet, screw the new fan into place (See Figure 53)
7) Put electric board cover back on and fasten screws to secure (See Figure 52)

6.8. Replace CPU

Replacement of electronic boards should only be performed by or under the supervision of an authorized service representative and in accordance with this Service Manual. Incorrect installation of a board could damage the board and/or the functioning of the cabinet.

The CPU is located on the right of the electric board under the CPU cover (See Figure 3).

1) Make sure that the power is off.
2) Use Ellen key to unscrew the 2 screws and remove the CPU board cover, located under the cabinet's hood (Figure 3), to reveal the CPU board.

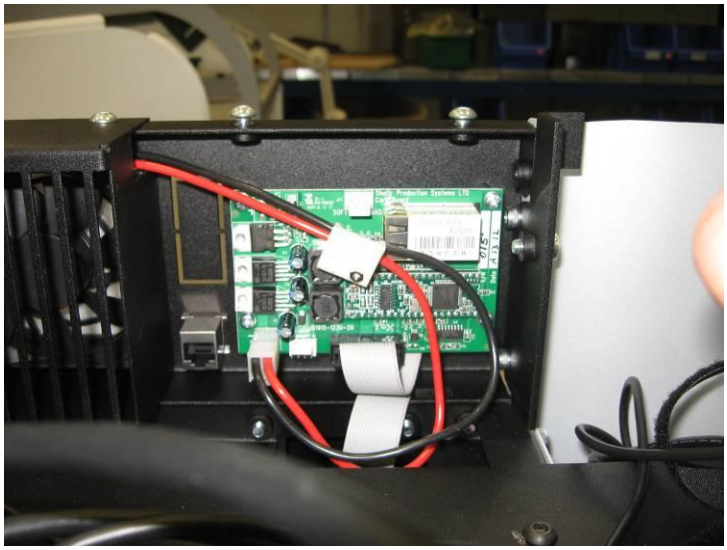


Figure 55 - Remove CPU cover

3) Disconnect CPU cable

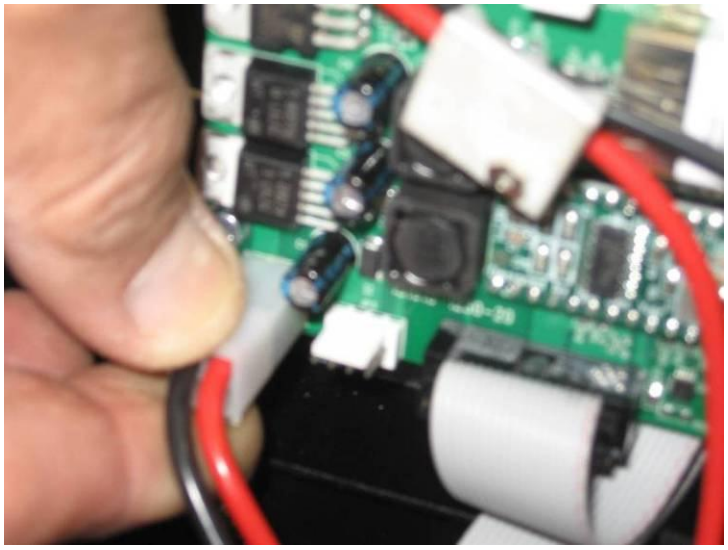


Figure 56 - Disconnect CPU cable

4) Unscrew the 4 screws and release the CPU board

Figure 57 - Disconnect CPU cable

5) Replace the failed CPU board with a new one and screw into place.
6) Connect the CPU cable.
7) Return the CPU cover and screw back into place.

6.9. Replace UPS & UPS battery

The UPS is located behind the computer under the cabinet hood.

1) Make sure that the power is off.
2) Disconnect all the cables connected to the UPS (coming from the computer and the main power).

Figure 58 - Disconnect All cables from the UPS

3) The UPS unit is secured into place by Velcro pads on the bottom. Lift the UPS to remove.

Figure 59 - Lift UPS unit to remove

4) Place the new UPS on top of the Velcro pads to secure in place and reconnect all cables.

To replace the UPS battery:

1) Make sure that the power is off.
2) Disconnect all the cables connected to the UPS (coming from the computer and the main power).
3) The UPS unit is secured into place by Velcro pads on the bottom. Lift the UPS to reach the battery cover.
4) Press to open battery cover.

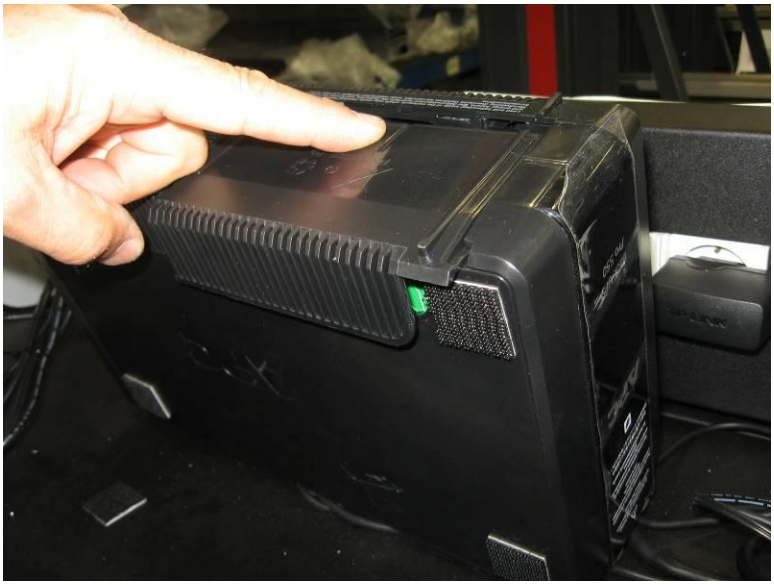


Figure 60 - Lift UPS unit to reach battery cover

5) Pull battery out and replace with a new battery.

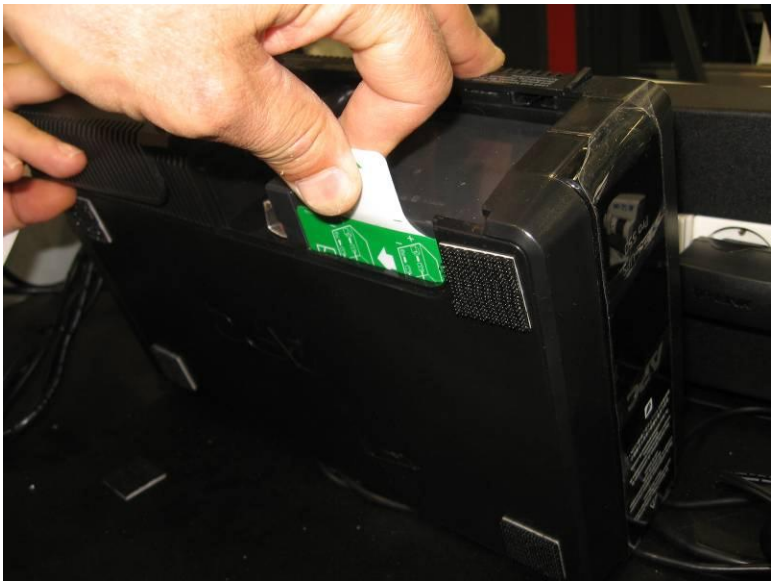


Figure 61 - Pull to replace UPS battery